

**FEDERAL AID  
ANNUAL RESEARCH PERFORMANCE REPORT**

ALASKA DEPARTMENT OF FISH AND GAME  
DIVISION OF WILDLIFE CONSERVATION  
PO Box 25526  
Juneau, AK 99802-5526

**PROJECT TITLE:** Monitoring of Fortymile ungulates and wolves following wolf sterilization and translocation.

**PRINCIPAL INVESTIGATORS:** Rodney D. Boertje, Craig L. Gardner and Jeff Gross

**COOPERATORS:** John Burch and Layne Adams (USGS); Rick Farnell, Robert Hayes, and Dorothy Cooley (Yukon Department of Renewable Resources); and Jim Herriges (BLM)

**FEDERAL AID GRANT PROGRAM:** Wildlife Restoration

**GRANT AND SEGMENT NR:** W-33-2

**PROJECT NR:** 3.48

**WORK LOCATION:** East central Alaska and adjacent Yukon Territory; portions of Units 12, 20B, 20D, 20E, and 25C

**STATE:** Alaska

**PERIOD:** 1 July 2003–30 June 2004

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**I. PROGRESS ON PROJECT OBJECTIVES SINCE PROJECT INCEPTION**

OBJECTIVE 1: Continue a literature review of canid fertility control, responses of caribou, moose, and Dall sheep to reduced predation, ecology and interactions of these predators and prey, nonlethal techniques for reducing predation, and effects of harvest on wolves, caribou, and moose.

Internet searches were conducted and peer contact was maintained to keep informed of new references.

OBJECTIVE 2: Monitor distribution, numbers, and fates of wolf packs with sterilized wolves using radiotelemetry. We want to know if sterilized wolves accept several wolves into their territories, the relative size of these territories compared with territories of fertile wolves, and the condition and age of sterilized wolves versus fertile wolves.

Edited Oct-04

Please note: This is a progress report and the information contained within may be further analyzed and refined.

We radiotracked about 15 packs monthly and recorded locations and numbers of wolves in the various packs. We also conducted wolf surveys in the vicinity of wintering caribou.

OBJECTIVE 3: We will continue to model Fortymile Caribou Herd production and causes and rate of mortality to evaluate the effects of wolf-caused mortality on herd trend.

Nine studies of radiocollared newborn caribou were conducted from May 1994 through May 2002. A calf mortality study is proposed after wolves recover in the treated area. The mortality rate of radiocollared yearling and adult female caribou from 15 May 2003 to 14 May 2004 was 10.6% similar to the 13-year average of 9.7%. Wolf predation was the single most important cause of mortality as in all previous years

OBJECTIVE 4: Document whether a significant increase in moose density occurs in the treatment area versus an adjacent treated area between October 2003 and October 2007.

We flew moose surveys in the southern portion of the treated area and adjacent untreated areas in November 2003, as in previous years. Surveys were flown to test the effect of reducing wolf numbers on moose. No clear increase in moose numbers or moose calf survival was noted in the wolf treatment area. Grizzly bears were previously documented as the major predator of moose in this area.

OBJECTIVE 5: Document whether significant increases in sheep numbers occur in the treatment area between summer 2003 and summer 2007.

We flew sheep surveys in the treated areas in summer 2003 as in previous years. No clear increase in sheep numbers or lamb survival was noted in the wolf treatment area.

OBJECTIVE 6: Follow guidelines presented in Part V of the Management Plan to continue to increase public awareness of Fortymile wildlife issues.

The twelfth issue of *The Comeback Trail* newsletter was published in July 2003. Results of the above studies were presented at local fish and game advisory committee meetings in Fairbanks, Central, Delta, Eagle, and Tok; Board of Game meetings; and University of Alaska and high school classrooms. In addition we participated in several briefings with the military and continued to post current caribou locations on a website to expedite mitigation of overflights during May and June 2004. Conclusions of the study of the effects of jet overflights on Fortymile caribou were accepted for publication in the *Journal of Wildlife Management*.

## **II. SUMMARY OF WORK COMPLETED ON JOBS IDENTIFIED IN ANNUAL PLAN THIS PERIOD**

JOB 1: Continue a literature review of canid fertility control, responses of caribou, moose, and Dall sheep to reduced predation, ecology and interactions of these predators and prey, nonlethal techniques for reducing predation, and effects of harvest on wolves, caribou, and moose.

Internet searches were conducted and peer contact was maintained to keep informed of new references.

JOB 2: Monitor distribution, numbers, and fates of wolf packs with sterilized wolves using radiotelemetry. We want to know if sterilized wolves accept several wolves into their territories, the relative size of these territories compared with territories of fertile wolves, and the condition and age of sterilized wolves versus fertile wolves.

We radiotracked about 15 packs monthly and recorded locations and numbers of wolves in the various packs. We also conducted wolf surveys in the vicinity of wintering caribou.

JOB 3: We will continue to model Fortymile Caribou Herd production and causes and rate of mortality to evaluate the effects of wolf-caused mortality on herd trend.

We examined all radiocollared cows older than 2 years of age during May 2004 to determine if cows were pregnant; 41 (87%) of 47 cows were pregnant. The 20-year average pregnancy rate is 88.6% for the Fortymile herd. No calves were collared in May 2004 because only 8 sterilized wolf packs remained. We collared and weighed 18 calves in late September 2003 to evaluate summer growing conditions and winter mortality rates. No calves died from capture-related causes, but the calves averaged only 51.1 kg, the lowest average weight since data were first gathered in 1990. We also evaluated causes and rates of natural mortality for caribou older than 5 months of age during this reporting period using at least monthly flights and timely examination of mortality sites. We used a helicopter for transportation to these sites, and derived mortality rates using Kaplan–Meier techniques. The mortality rate of radiocollared yearling and adult females from 15 May 2003 to 14 May 2004 was 10.6%, similar to the 13-year average of 9.7%. Wolf predation was the single most important cause of mortality as in all previous years

On 27 September 2003 we counted the proportion of calves, cows and bulls among 6296 caribou. These caribou were distributed in proportion spatially to 77 independent radio collars. Calf:cow ratios were the lowest since 1991 indicating herd numbers likely decreased during May 2003 to May 2004. Low calf:cow ratios were influenced to a large degree by the low pregnancy rate in 2003, the lowest rate since 1993. Heavy smoke from several fires prevented opportunities for a photocensus in summer 2004. However, based on modeling of empirical data and average calf mortality, herd numbers on 1 July 2004 remained approximately stable since the last count of 43,375 caribou photographed on 30 June 2003.

JOB 4: Document whether a significant increase in moose density occurs in the treatment area versus an adjacent treated area between October 2003 and October 2007.

In November 2003, moose surveys were conducted in the southern portion of the treatment area and nearby untreated areas to test the effect of reducing wolf numbers on moose. No clear increase in moose numbers or calf survival was noted in the wolf treatment area.

JOB 5: Document whether significant increases in sheep numbers occur in the treatment area between summer 2003 and summer 2007.

We flew sheep surveys in the treated areas in summer 2003 as in previous years. No clear increase in sheep numbers or lamb survival was noted in the wolf treatment area.

JOB 6: Follow guidelines presented in Part V of the Management Plan to continue to increase public awareness of Fortymile wildlife issues.

The twelfth issue of *The Comeback Trail* newsletter was published in July 2003. Results of the above studies were presented at local fish and game advisory committee meetings in Fairbanks, Central, Delta, Eagle, and Tok; Board of Game meetings; and University and high school classrooms. In addition we participated in briefings with the military and continued to post current caribou locations on a website to expedite mitigation of overflights during May and June 2004. Conclusions of the study of the effects of jet overflights on Fortymile caribou were accepted for publication in the *Journal of Wildlife Management*.

### **III. ADDITIONAL FEDERAL AID-FUNDED WORK NOT DESCRIBED ABOVE THAT WAS ACCOMPLISHED ON THIS PROJECT DURING THIS SEGMENT PERIOD**

We flew about 10 additional telemetry flights to monitor caribou distribution and movements during June, August, and September using funds from Tok caribou survey and inventory sources. Specifically, these flights provided precensus and harvest monitoring data, as well as mortality data. The caribou census, caribou composition count, moose surveys, some wolf surveys, and sheep surveys were also funded using Tok survey and inventory funds.

### **IV. PUBLICATIONS**

Gardner, C.L. and L. Zaczkowski. July 2003. *The Comeback Trail* newsletter. Issue 12. Alaska Department of Fish and Game, Tok, Alaska.

Magoun, A.J., J.P. Lawler, C.L. Gardner, R.D. Boertje, and J.M. Ver Hoef. 2003. Short-term impacts of military jet overflights on the Fortymile caribou herd during calving season. Alaska Department of Fish and Game. Juneau, Alaska. Accepted by the *Journal of Wildlife Management* in 2004.

### **V. RECOMMENDATIONS FOR THIS PROJECT**

Given funding cuts amounting to \$60,000 in the operating budget during FY05, several aspects of this study will be deleted unless alternative funding is found. Currently, we are requesting a FY06 annual budget of \$28,200 to fund the monitoring of caribou mortality, pregnancy, and September calf weights as well as a minimum expenditure on wolf surveys, collaring, and radiotracking.

### **VI. APPENDIX**

**VII. PROJECT COSTS FOR THIS SEGMENT PERIOD**

FEDERAL AID SHARE \$ 76,509    STATE SHARE \$ 25,503    =    TOTAL \$102,012

**VIII. PREPARED BY:**

Rodney D. Boertje  
Wildlife Biologist III

**SUBMITTED BY:**

Mark E. McNay  
Acting Research Coordinator

**APPROVED BY:**

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Matthew H. Robus, Director  
Division of Wildlife Conservation

**APPROVAL DATE:** \_\_\_\_\_